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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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PA 718,972 11/22/99 FAVIER

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1180 AVENUE OF THE AMERICAS
NEW YORK, NY 10036-8403

EXAMINER

ROMAN, D	
ART UNIT	PAPER NUMBER

2812

DATE MAILED:

06/16/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/718,932

Applicant(s)

PAVIER, MARK

Examiner

Angel Roman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 26 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) 1 and 6 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 11/22/00 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 20) ☐ Other

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DETAILED ACTION

Drawings

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Specification

1. The disclosure is objected to because of the following informalities: On page 3, line 21 "12" should be replace with --11--.

Appropriate correction is required.

Claim Objections

2. Claim 1 is objected to because of the following informalities: On line 1 "The process" should be replace with --A process--. Appropriate correction is required.
3. Claim 6 is objected to because of the following informalities: "the further" should be replace with --a further--. Appropriate correction is required.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

5. Claims 1-5 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Seo et al. U.S. Patent 5,849,607.

Seo et al. discloses a process of connecting a semiconductor die to a lead frame (substrate): said process comprising the steps of adhering a thin, flexible, heat curable polyimide film (see column 3, lines 5-12) which is at least partially cured (see abstract) and is of a first area, to a thin semiconductor wafer 49 of a second area (see figure 4) and which contains a plurality of laterally displaced, identical semiconductor die of respective third areas which are each substantially less than the area of said first area; thereafter simultaneously singulating both said heat curable film and said plurality of identical die to form individual elements each being of the area of said die and a matching area of adhesive film adhered to one surface of said die (see column 4, lines 22-52); thereafter applying said singulated die to the top surface of said substrate surface with the film on said die pressed against said top surface; and thereafter fully curing said film to firmly adhere said die to said substrate (see column 4, lines 53-63). Said film on said die has the same or different area as that of said die

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after assembly onto said substrate (see figure 4). Said first area is substantially identical to, or different from, said second area.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seo et al. U.S. Patent 5,849,607 in view of Burns U.S. Patent 5,221,642.

Seo et al. is applied as above but lacks anticipation on adhering a second semiconductor die with a second adhesive film thereon to said substrate at a position laterally removed from the first die.

Burns discloses a second semiconductor die with a second adhesive film thereon to a substrate at a position laterally removed from a first die (see figure 4b). In view of this disclosure it would have been obvious to a person having ordinary skills in the art at the time the invention was made to adhere a second semiconductor die with a second adhesive film thereon to a substrate at a position laterally removed from a first die as disclose in Burns in the primary reference of Seo et al. because it is a conventional process.

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8. Claims 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Seo et al. U.S. Patent 5,849,607 in view of Takiar et al. U.S. Patent 5,442,435.

Seo et al. is applied as above but lacks anticipation on adhering a second die with a second adhesive film thereon to the top of said die secured to said substrate and a process wherein said adhesive film has a smaller area than said top surface of said die and wherein said second die and said second adhesive film both have the same area as said adhesive film.

With respect to adhering a second die with a second adhesive film thereon to a top of a die secured to a substrate Takiar et al. discloses adhering a second die with a second adhesive film thereon to a top of a die secured to a substrate (see figure 3). In view of this disclosure it would have been obvious to a person having ordinary skills in the art at the time the invention was made to adhere a second die with a second adhesive film thereon to a top of a die secured to a substrate as disclose in Takiar et al. in the primary reference of Seo et al. because it is a conventional process in the semiconductor manufacturing industries.

Regarding a process wherein an adhesive film has a smaller area than a top surface of a die and wherein a second die and a second adhesive film both have the same area as said adhesive film. This limitation, absent any criticality, is only considered to be an obvious modification of the shape of the area disclosed by Takiar et al. as the courts have held that a change in shape or configuration, without any criticality, is within the level of skill in the art as the particular shape claimed by applicant is nothing more than one of numerous shapes that a person having ordinary skill in the

art will find obvious to provide using routine experimentation based on its suitability for the intended use of the invention. See In re Dailey, 149 USPQ 47 (CCPA 1976).

9. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seo et al. U.S. Patent 5,849,607 in view of the prior art disclose on page 4, line 19 of the specification (hereinafter Prior Art).

Seo et al. is applied as above but lacks anticipation on removing said dice and film to said substrate by a pick and place apparatus.

Prior Art discloses removing said dice and film to said substrate by a conventional pick and place apparatus. In view of this disclosure it would have been obvious to a person having ordinary skills in the art at the time the invention was made to remove said dice and film to said substrate by a pick and place apparatus as disclose in Prior Art in the primary reference of Seo et al. because it is a conventional method of handling a semiconductor device.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seo et al. U.S. Patent 5,849,607.

Seo et al. lacks anticipation on disclosing a comparison between the area of said adhesive film and said top surface of said die. This limitation, absent any criticality, is only considered to be an obvious modification of the shape of the area disclosed by Seo et al. as the courts have held that a change in shape or configuration, without any criticality, is within the level of skill in the art as the particular shape claimed by applicant

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is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide using routine experimentation based on its suitability for the intended use of the invention. See *In re Dailey*, 149 USPQ 47 (CCPA 1976).

Conclusion

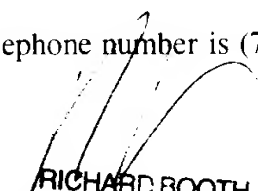
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hoffman et al. discloses a semiconductor device including stacked chips using polyimide as an adhesive. Moden discloses a method of attaching a semiconductor die to a lead frame using a pick-and-place apparatus to position a die.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel Roman whose telephone number is (703) 306-0207. The examiner can normally be reached on Monday to Friday from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Angel Roman
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RICHARD BOOTH
PRIMARY EXAMINER